CLAIMS

I CLAIM:

1. A self-aligning tapping tool comprising:

an elongate handle having a longitudinal counterbore through a first end;

a tap received in the counterbore;

a collar operatively secured to the tap, the collar being slightly smaller than the counterbore to enable slidable movement and to prevent rotation of the tap relative to the handle;

a retainer secured to the handle at the first end to retain the collar in the counterbore and having a central opening receiving the tap; and

biasing means in the counterbore for biasing the tap and the collar outwardly to extend the tap when the handle is turned to thread an opening in a workpiece.

2. The self-aligning tapping tool of claim 1 wherein the handle further comprises a slot at a second end for receiving a drive tool.

3. The self-aligning tapping tool of claim 1 wherein the collar has a flatted outer side engaging a counterbore flatted side.

4. The self-aligning tapping tool of claim 1 wherein the collar comprises a square collar and the counterbore has a square cross section.

5. The self-aligning tapping tool of claim 1 wherein the collar is secured tot eh tap with screws that lock in flutes of the tap.

6. The self-aligning tapping tool of claim 1 wherein the retainer comprises an annular retainer having a plurality of radial through openings receiving guide screws extending into flutes of the tap.

7. The self-aligning tapping tool of claim 1 wherein the biasing means comprises a spring acting on the collar.

8. The self-aligning tapping tool of claim 1 wherein the biasing means comprises a spring acting on an inner end of the tap.

9. The self-aligning tapping tool of claim 1 wherein the biasing means comprises a first spring acting on the collar and a second spring, received in the first spring, acting on the tap.

10. The self-aligning tapping tool of claim 9 wherein the counterbore comprises a shoulder defining an inner seat for the first spring.

11. A self-aligning handheld tapping tool comprising:

an elongate cylindrical handle having a longitudinal, rectangular counterbore through a first end and a slot at a second end for receiving a drive tool;

a tap received in the counterbore;

a rectangular collar operatively secured to the tap, the collar being slightly smaller than the counterbore to enable slidable movement and to prevent rotation of the tap relative to the handle;

an annular retainer secured to the handle at the first end to retain the collar in the counterbore and having a central opening receiving the tap; and

biasing means in the counterbore for biasing the tap and the collar outwardly to extend the tap when the handle is turned to thread an opening in a workpiece.

12. The self-aligning handheld tapping tool of claim 11 wherein the slot is square shaped for receiving a ratchet device.

13. The self-aligning handheld tapping tool of claim 11 wherein the retainer has a flat end surface for engaging a workpiece.

14. The self-aligning handheld tapping tool of claim 11 wherein the collar comprises a square collar and the counterbore has a square cross section.

15. The self-aligning handheld tapping tool of claim 11 wherein the collar is secured to the tap with screws that lock in flutes of the tap.

16. The self-aligning handheld tapping tool of claim 11 wherein the retainer has a plurality of radial through openings receiving guide screws extending into flutes of the tap.

17. The self-aligning handheld tapping tool of claim 11 wherein the biasing means comprises a spring acting on the collar.

18. The self-aligning handheld tapping tool of claim 11 wherein the biasing means comprises a spring acting on an inner end of the tap.

19. The self-aligning handheld tapping tool of claim 11 wherein the biasing means comprises a first spring acting on the collar and a second spring, received in the first spring, acting on the tap.

20. The self-aligning handheld tapping tool of claim 19 wherein the counterbore comprises a shoulder defining an inner seat for the first spring.